

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1 through 8. (Canceled)

9. (Original) A method of manufacturing a differential assembly including a case and a gear, the gear having a tubular insert and a tubular preform, the tubular insert having a radially extending protrusion, the method comprising the steps of:

positioning the tubular insert within a die;

positioning the tubular preform over said insert;

forging the preform in said die to define a gear having a first portion engaging said protrusion; and

rotatably mounting said gear in the case.

10. (Original) The method of claim 9 wherein said forging step includes forming an upper lip and a lower lip on said first portion to axially restrain the tubular insert from movement relative to said first portion.

11. (Original) The method of claim 10 further including engaging said upper and lower lips with the protrusion.

12. (Original) The method of claim 9 wherein said forging step includes forming net-shaped teeth on said first portion.

13. (Original) The method of claim 9 wherein said tubular insert includes a plurality of protrusions circumferentially spaced apart, said method further including encapsulating said protrusions within said first portion during said forging step.

14. (Original) The method of claim 13 wherein said tubular insert includes a recess positioned between each protrusion of said plurality of protrusions, said forging step including deforming said preform to enter said recesses.

15. (Original) The method of claim 9 wherein said forging is performed in a closed die.

16. (Original) The method of claim 9 further including inserting a pin within the tubular insert to resist deformation of the tubular insert during forging.

17. (Original) The method of claim 16 wherein said pin includes an outer surface having a contour complementary to an inner surface of the tubular insert to further resist deformation of the tubular insert during forging.

18. (Original) The method of claim 9 further including forming the tubular preform from powdered metal.

19. (Original) The method of claim 9 further including positioning a meltable material between the tubular insert and the tubular preform prior to forging the preform to bond said first portion to the insert.

20. (New) A method of manufacturing a differential assembly having a case and a gear, the gear including an insert portion and a preform portion, the method comprising:

providing a die assembly having an upper die, a lower die and a mandrel, one of the upper die and the lower die defining a plurality of gear teeth, the upper and lower dies forming a closed die that defines a die cavity, the mandrel being received into the die cavity and being configured to matingly engage at least a portion of an interior surface of the insert portion;

positioning the insert portion onto the mandrel;

positioning the preform portion within the die cavity;

pressing the preform portion between the upper and lower dies in a pressing direction to form a plurality of gear teeth on the preform portion in single stroke, the preform deforming both axially and radially during the single stroke such that the preform portion is fixedly engaged to the insert portion.

21. (New) The method of claim 20, wherein the preform portion is heated prior to pressing the preform portion between the upper and lower dies.

22. (New) The method of claim 21, wherein a material is placed between the insert portion and the preform portion prior to the pressing the preform portion between the upper and lower dies, the material being configured to bond the insert portion to the preform portion.

23. (New) The method of claim 22, wherein the material is selected from a group consisting of brazing materials and soldering materials.

24. (New) The method of claim 20, wherein the mandrel includes a splined portion that matingly engages an internal spline formed on the insert portion.

25. (New) The method of Claim 20, wherein the insert portion includes a body portion and a flange that extends radially outwardly of the body portion, and wherein the preform portion moves radially inward against fore and aft surfaces of the flange when the preform portion is pressed between the upper and lower dies to thereby inhibit axial movement of the insert portion relative to the preform portion.

26. (New) The method of Claim 25, wherein at least one locking feature is formed on the insert portion, the locking feature being formed such that the preform portion moves radially inward the at least one locking feature when the preform portion is pressed between the upper and lower dies to thereby inhibit radial movement of the insert portion relative to the preform portion.

27. (New) The method of claim 26, wherein the at least one locking feature is formed on the flange.

28. (New) The method of claim 26, wherein the at least one locking feature includes a plurality of scallops.